



# National policies on rural decentralized domestic wastewater treatment in China

**Dr. Meixue Chen**

**North Center for Rural Wastewater Treatment  
Technology, Ministry of Housing and Urban-  
Rural Development**

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# North Center for Rural Wastewater Treatment Technology Ministry of Housing and Urban-Rural Development

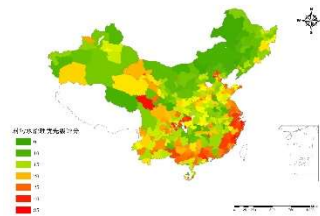


Established in 2008

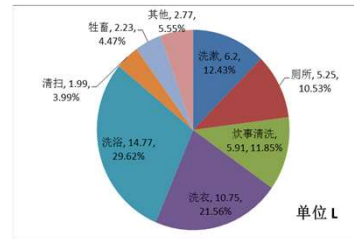
## Mission & Goals

To build scientific and technological platforms, gather national scientific and technological forces, serve rural pollution control, and provide technical support for the formulation of relevant policies, regulations and administrative management.

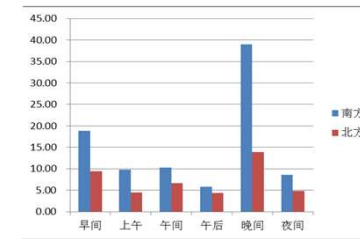
### Pollution characteristics



National survey and evaluation of rural sewage



Source and proportion of rural household sewage



Spatial and temporal characteristics of rural sewage

### R&D



Oxidation ditch



MBR



Demonstration in Yunnan



Demonstration in Guangxi



First demonstration county: Changshu

### Administrative support



Planning



Technical guidelines



Standard specification



住房和城乡建设部  
农村污水处理技术北方研究中心  
North Research Center for Rural Wastewater Treatment Technology  
Ministry of Housing and Urban-Rural Development

# 1.Current situation of pollution control in rural area

## 1.1 The inevitable requirement of building a moderately prosperous society in all respects



By the end of 2017, the pollution-free disposal rate of urban household garbage will reach 97%, and only 55% in rural areas ;



Urban residents generally use water flush toilets, while only 36 percent of rural households use water flush toilets

**The overall look of the countryside has not fundamentally changed. We must conform to the expectations of farmers for a better life.**

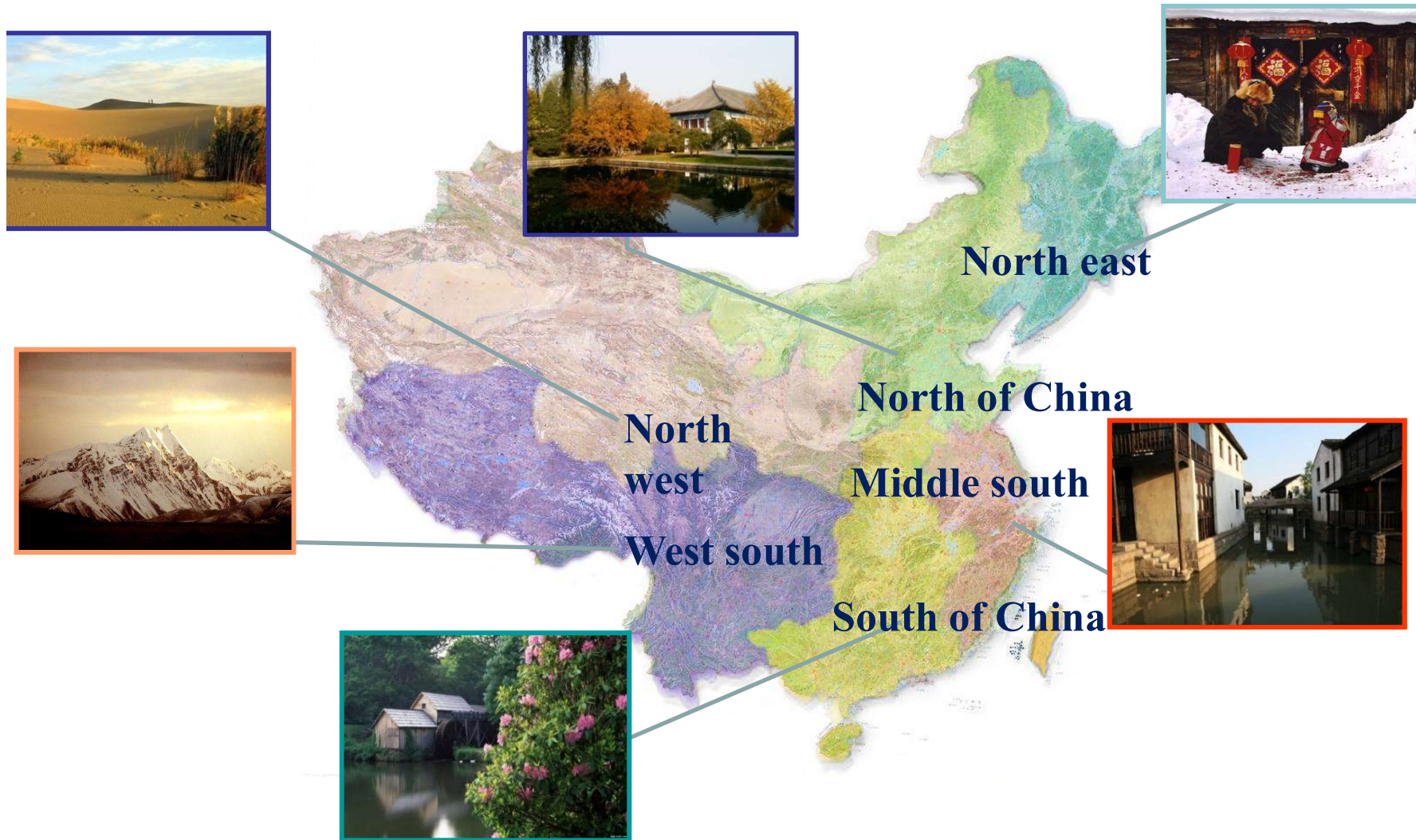


## 1.Current situation of pollution control in rural area



General Secretary Xi proposed to **"launch a toilet revolution"** at a peasant family of Yanbian Prefecture, Jilin Province

# 1.Current situation of pollution control in rural area



**Rural areas**

Different climate, geographical features, economic development level, drainage habits.....

## 1.Current situation of pollution control in rural area

### 1.2 Needs for decentralized wastewater systems

1. Satisfy the demand of **public health** and various **water quality** goals;
2. **Economic suitability** of processing technologies;
3. **Operation simple and easy routine management.**

## 1.3 Actions

# 13th Five-Year Plan: Rural Residential Environment Improvement Actions



- Integration of urban and rural development
- The development of social undertakings in rural areas
- Urban public services extend to rural areas



**1.3 Actions**

**Rural household toilet renovation**

**Three kinds of patterns**

- **Black water treatment is preferred**
- **Health dry toilet**
- **Combination of rural sewage treatment**



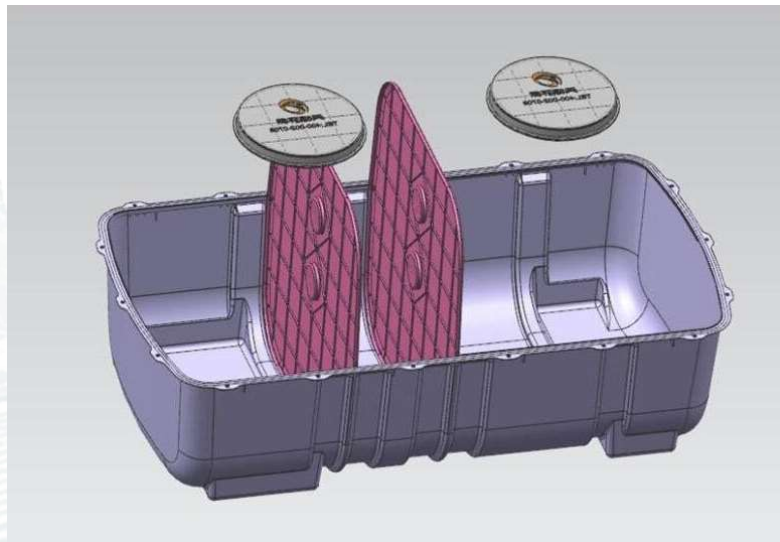
## 2. Case study

### 2.1 Experience in Shandong province

Determine governance patterns appropriately

General village

three-squared septic tank



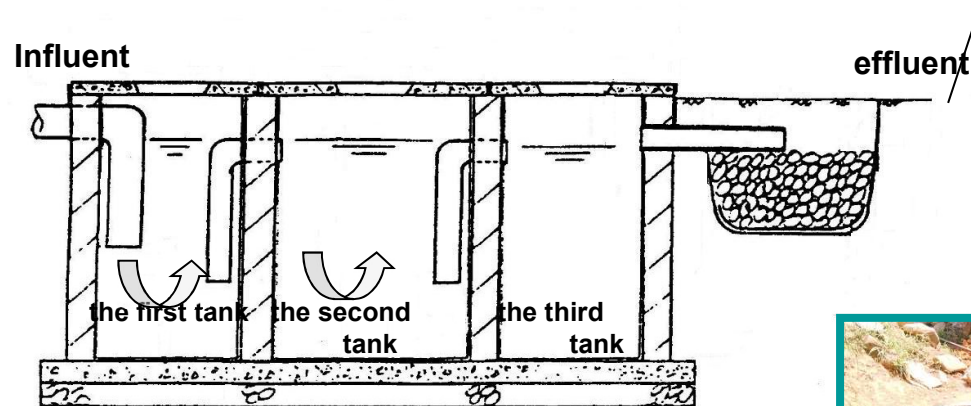
Double urn funnel toilet



# Basic principles of septic tanks

**Function:** the primary treatment structures of suspended matter, organic matter and pathogenic microorganisms in fecal sewage or other domestic sewage are removed by precipitation and anaerobic microbial fermentation.

**Removal rate:** after 12-24h precipitation, 50% to 60% of suspended matter is removed, and the precipitate is decomposed by anaerobic fermentation for more than 3 months, and becomes stable mature sludge.



Structure





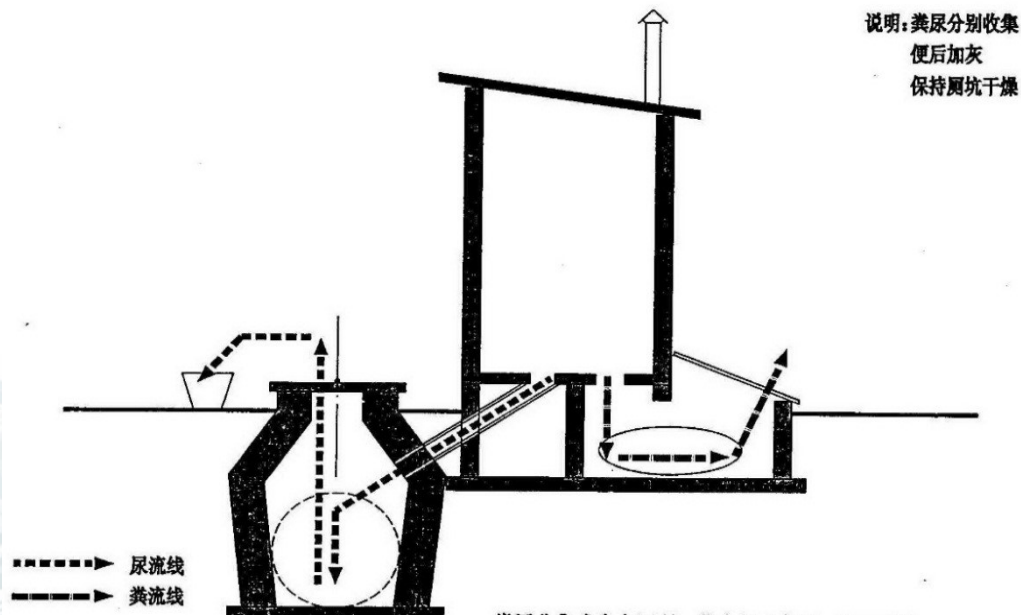
**We will actively explore and innovate to provide policies, funds and technical guarantee for the sewage treatment of rural toilets**

To explore the operation system of toilet



## 2.1 Experience in Shandong province villages in a mountainous area or in a water-deficient area

### Fecal urine collection toilet



#### composition

Store tank of the urinal

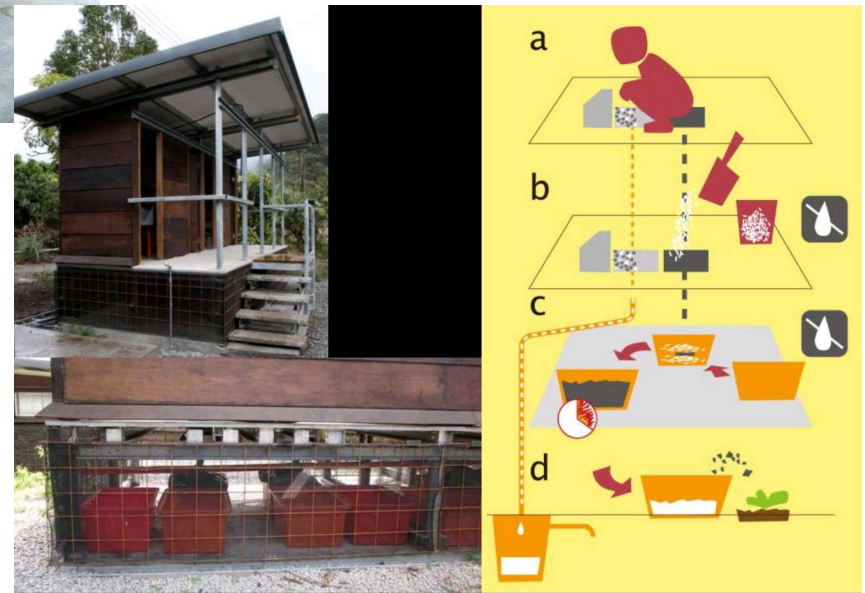
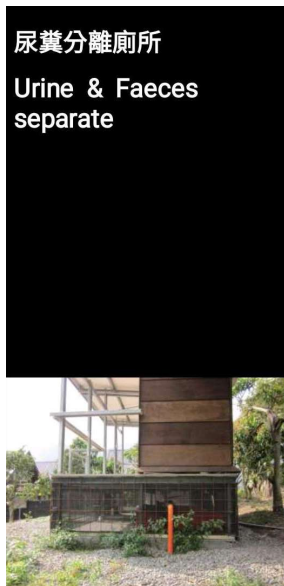
Fecal and urine diverter

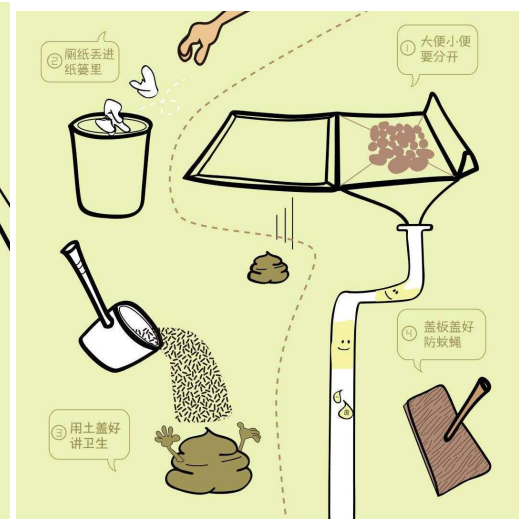
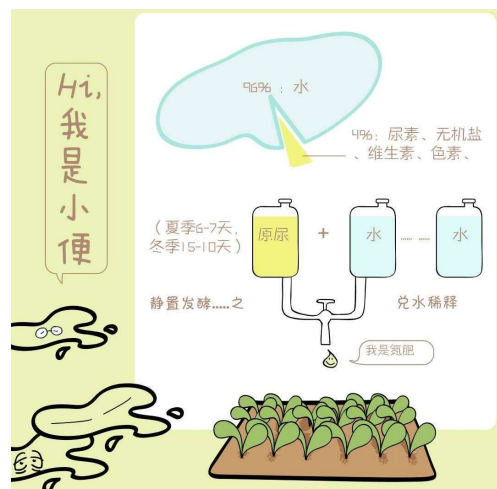
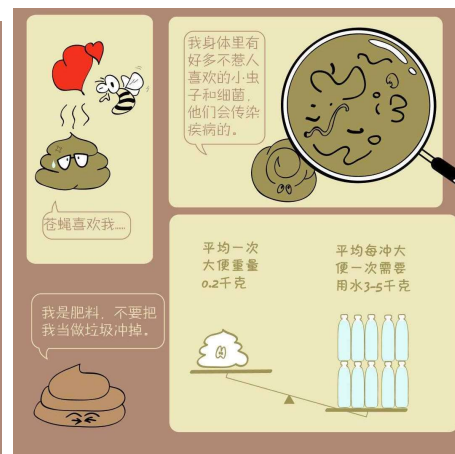
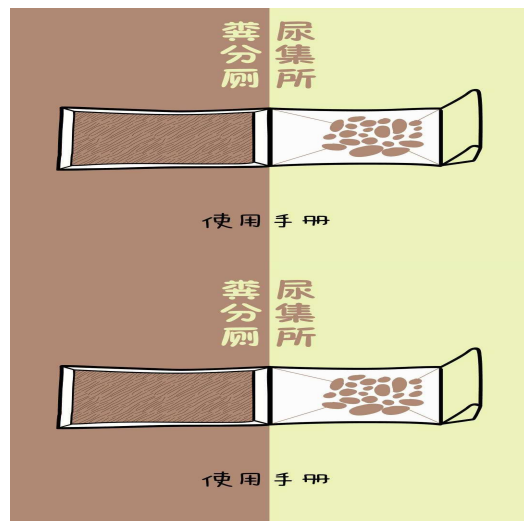




# Ecological toilet

## Separation of fecal and urine







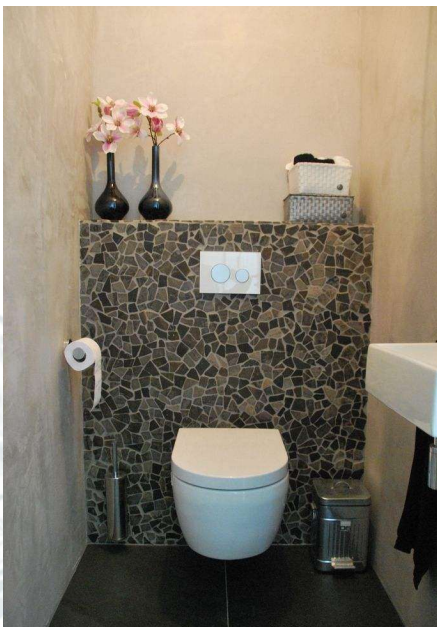
## 2.1 Experience in Shandong province

villages covered by a town sewerage network

New rural community

Villages in key drinking water sources protection areas

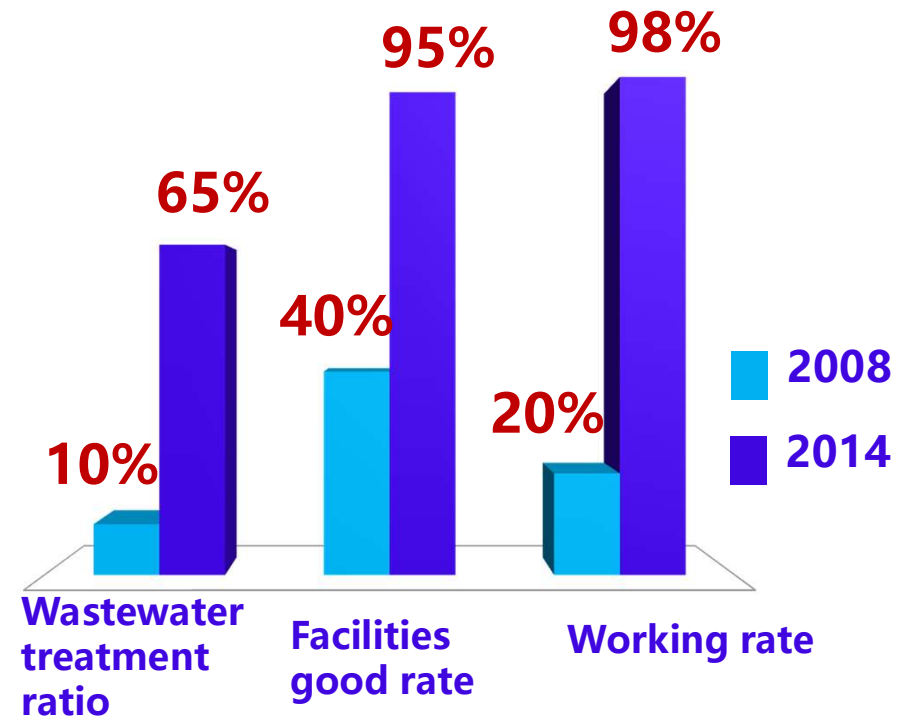
➤ Flush toilet



## 2.2 Experience in Changshu



Demonstration of one hundred counties



**Changshu model**

Regional  
integrated  
propulsion

Government  
purchase  
service

Unified  
operation of  
the company



## 2.2 Experience in Changshu

**unified planning**

**County as an unit**



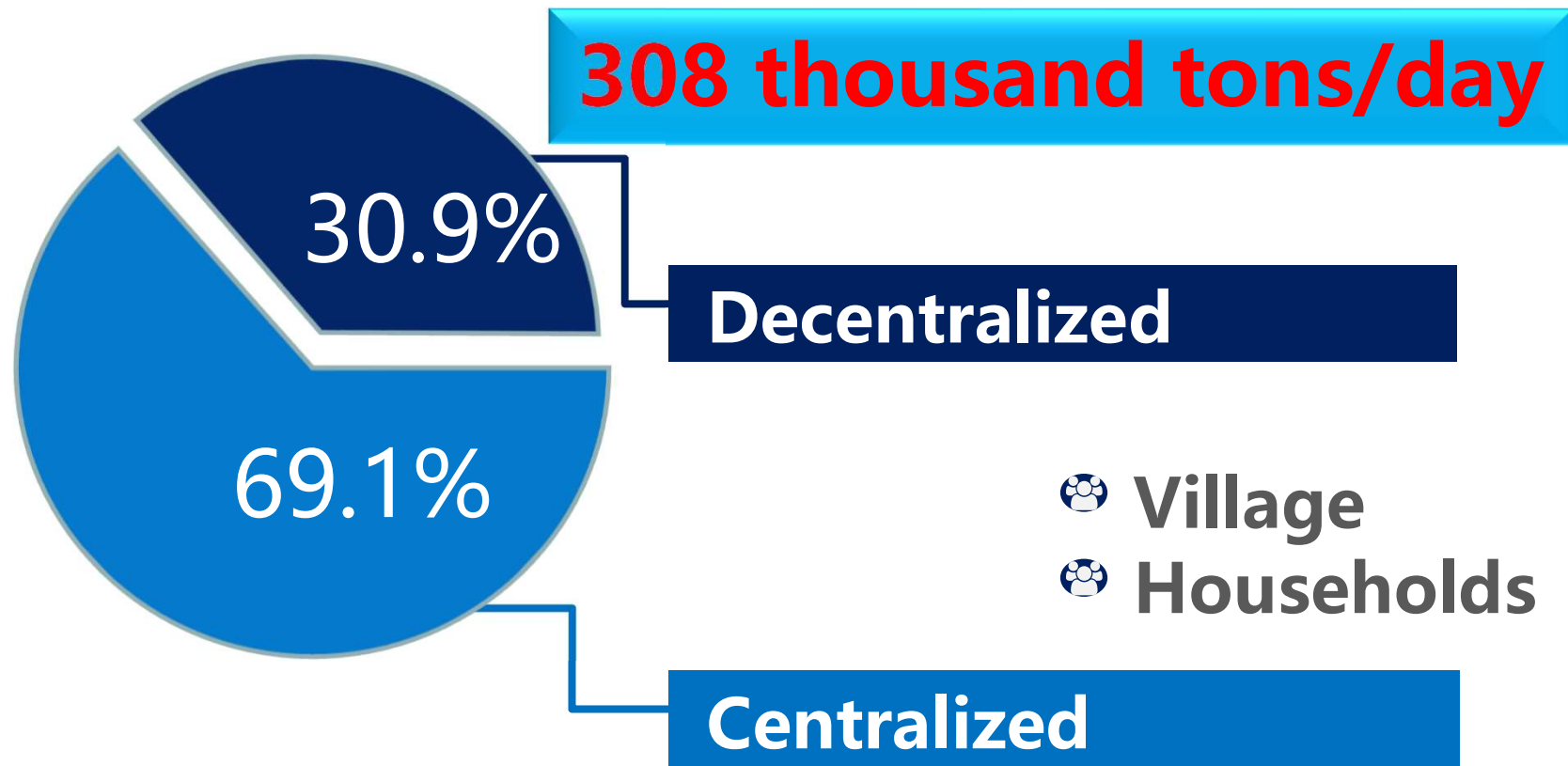
**29** WWTPs before 2008

**11** WWTPs after 2012

Since 2008, local governments have broken administrative boundaries, drawn up special plans for the treatment of domestic sewage, removed, upgraded and built high-standard centralized sewage treatment plants, and rationally laid out decentralized sewage treatment facilities in rural areas.

## 2.2 Experience in Changshu

**unified planning**

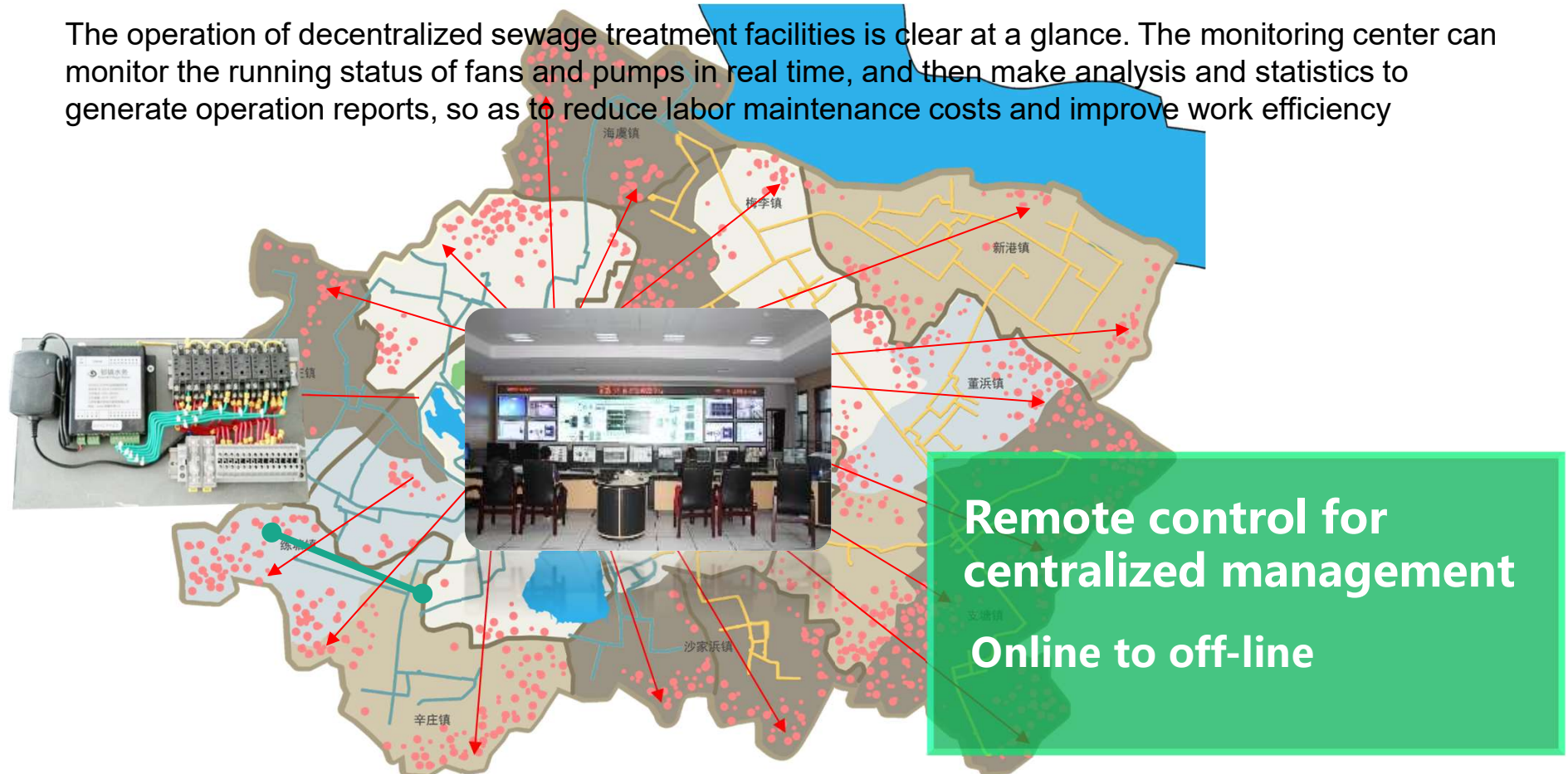


About 70% of the households in Changshu have their sewage treated in the urban pipe network. Other farmers choose three decentralized treatment modes, namely relatively centralized, village group treatment and household treatment, according to the classification of village shape and scale.

## 2.2 Experience in Changshu

### Information-based monitoring platform of rural sewage treatment

The operation of decentralized sewage treatment facilities is clear at a glance. The monitoring center can monitor the running status of fans and pumps in real time, and then make analysis and statistics to generate operation reports, so as to reduce labor maintenance costs and improve work efficiency



## Centralized management for decentralized facilities

### 3. Consideration Management

- **Funding**
- **Appropriate system design and selection process**
- **Operator training**

### Promotion Plan

### —Funding

- **PPP (Public-Private-Partnership)**

- The main body of construction and operation management : Enterprises
- Local government is mainly to buy services included in the annual budget



# Thanks for your attention!

